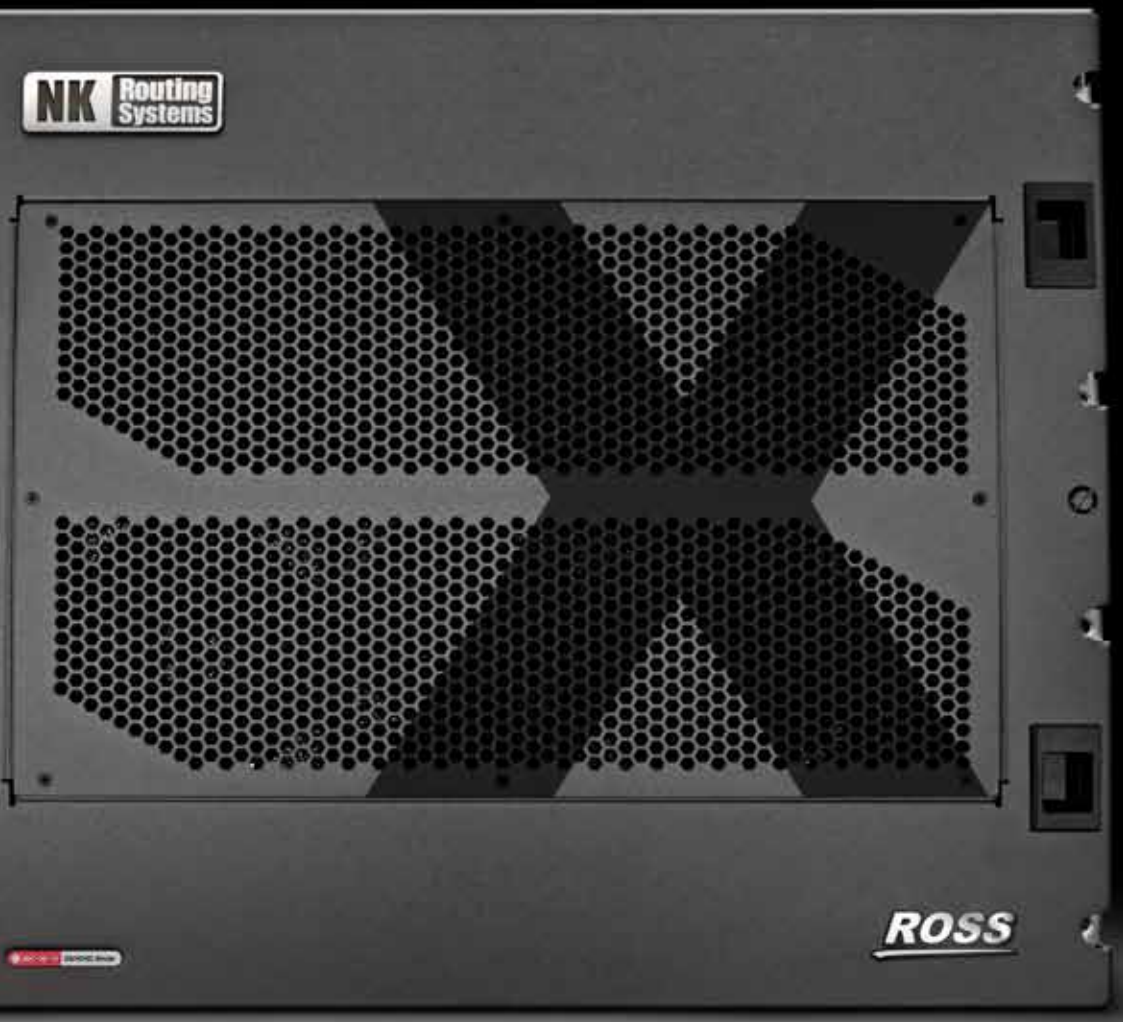

NK Routing Systems

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NK Series Routing System

Ross Video's NK Series Routing Systems are a comprehensive family of routing solutions. NK Series offers a wide variety of matrix sizes & types, flexible control panels, and a powerful control system to tie everything together. Whether it's a small utility router, or a large mission critical facility system, NK Series offers a solution to fit your budget and needs.

NK Series Routers are available in sizes ranging from 16x4 to 144x144. Any matrix type can be built into a system with any combination of other NK matrices - all united under one control system.

Initially created by well-known Australian design engineer, Joe Talia (and team), NK Series Routers have a long history and heritage. The team continues inspired work on this router line at our subsidiary, Ross Video Pty's facilities in Melbourne, Australia.

NK Routers represent great value, are backed by a 5-year warranty, and include world-renowned Ross Video technical support.

Feel free to visit **www.rossvideo.com**, contact us at **solutions@rossvideo.com**, or reach out to your local Ross Video sales representative or reseller.

At-A-Glance Features

NK SERIES CROSSPOINT MATRICES

- Comprehensive product family
- Full range, from utility to facility solutions
- 16x4 to 144x144 sizes
- Wide range of matrix types
- Modular 64x, 72x, and 144x designs
- 144x feature redundant crosspoint matrices, power and control

NK SERIES CONTROL SYSTEM

- Full featured control system
- Distributed control architecture with no single point of failure
- Powerful and intuitive DashBoard Control System for configuration and monitoring
- Range of highly flexible control panels
- Virtual routing and resource management
- Serial and GPI automation interfaces

NK Series Router Family

1RU

2RU

3RU

10RU

	16x4	16x16	32x32	34x34	64x64	72x72	144x144
3G / HD / SD	NK-3G164 (-RCP)	NK-3G16 (-RCP)	NK-3G34	NK-3G34	NK-3G64	NK-3G72	NK-3G144-X
AES / EBU Audio	NK-D164 (-RCP)	NK-D16 (-RCP)	NK-D32		NK-D64		
Analog Audio	NK-A164	NK-A16	NK-A32		NK-A64		
Analog Video	NK-V164	NK-V16	NK-V32				
Data (RS-422)		NK-M16	NK-M32				

UTILITY ROUTING

Utility routers include the 16x4, 16x16, 32x32 and 34x34 sizes and are available in a wide range of signal types including 3G / HD / SD SDI, Analog Video, AES / EBU Digital Audio, Stereo Analog Audio and Machine Control (RS-422). The compact design, and compelling price points make these routers a great solution for a wide variety of applications from standalone single crosspoint to larger multi-crosspoint systems.

MID-SIZE ROUTING

Mid-sized routers, 64x64 and 72x72 are modular and expandable in groups of 8 inputs and 8 outputs. They include 3G / HD / SD SDI, AES / EBU Digital Audio and Stereo Analog Audio signal types. These routers fill a unique niche in a demanding, yet price sensitive, segment of the market. The modular design lends itself to future growth and serviceability.

FACILITY ROUTING

The large NK-3G144-X is a scalable router designed to function in mission critical, high availability environments. The NK-3G144-X uses a common set of I/O boards and can be expanded in groups of 8 inputs and outputs to 144x144. This system is fully 3G compliant and will pass 3G / HD / SD SDI signals in addition to ASI. A key feature of this matrices is superior redundancy. It has been architected to be equipped with fully redundant power supplies, dual redundant crosspoints and dual redundant control cards.

DashBoard

NK Control and Monitoring

Virtual Control Panels

- Builtin templates for quick and easy router operation, from the click of a mouse, or touch of a touchscreen
- Access to every source, destination and level
- Perfect for a master engineering panel, or single cut-bus operator panel

Monitor, Control, Configure and Protect

DashBoard offers flexible control, configuration and monitoring over the entire NK router line and its control components. Using the NK-IPS Network Bridge, multiple DashBoard clients can run simultaneously to configure and monitor the NK router line, including signal status on each I/O port across multiple routers.

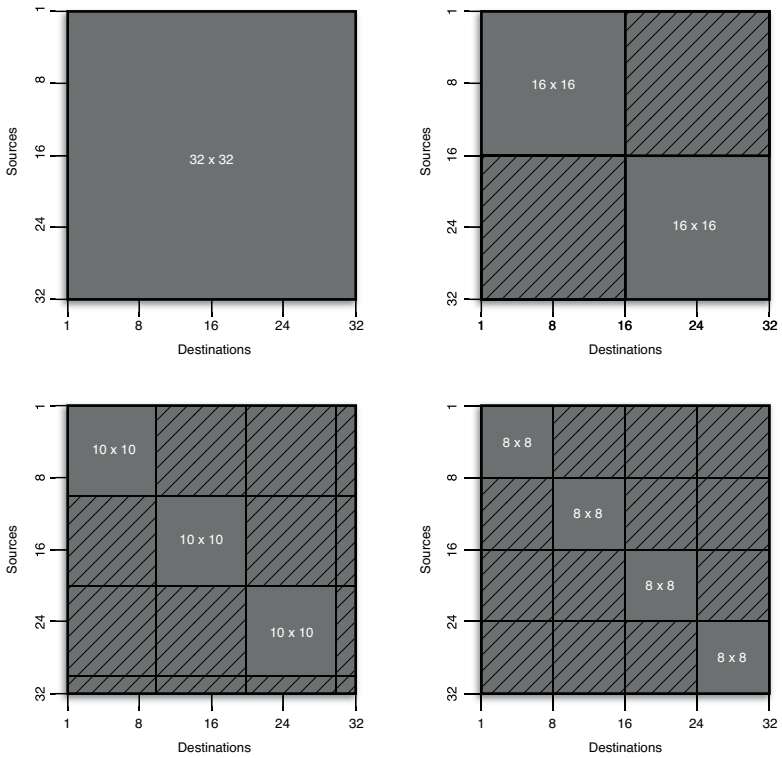
DashBoard provides intuitive control panel configuration, including crosspoint and function assignment for each button, macro programming, and menu structure building across the entire range of NK control panels. Configuration extends to all NK control devices including GPI/O modules, 3rd party protocol translators and the NK-VRC Virtual Routing Core.

Virtual control panels and the virtual switchboard are an engineer's dream, offering access to every crosspoint with the click of a mouse, or the press of a finger on a touch screen. Monitor, Control, Configure and Protect your NK routing system with DashBoard v6.

Intuitive Control and Monitoring

- Program remote control panel crosspoints and functions
- Configure router levels and break-away options
- Monitor crosspoints with the Virtual Switch Board

NK Series System Overview



RCP-NK1

RCP-NKM

RCP-NKQ

Partitioning

Each NK Series router can be configured with up to 8 partitions, effectively making two or more smaller routers from one larger one. Each partition can be assigned to a unique or common switching level. As an example, a single analog video matrix could be partitioned into 3 sections to switch YUV or RGB signals.

Router Partitioning

The example at top shows crosspoint assignments when a 32 x 32 router is partitioned. The image displays a 32 x 32 router with no partitions (top left); a 32 x 32 router partitioned as two 16 x 16 routers (top right); a 32 x 32 router partitioned as three 10 x 10 routers (lower left); and a 32 x 32 router partitioned as four 8 x 8 routers (lower right).

Control Panels

The NK Series offers 3 highly flexible, yet simple and intuitive control panels that can be configured to operate as an menu driven source / destination switching, cut-bus or multi-cutbus panel. Every control panel in the system can be independently configured to meet the needs of the particular operator position at which it is deployed.

Legend

3G 3Gb/s

HD HD-SDI

SD SD-SDI

AN-VID Analog Video

AN-AUD Analog Audio

AES AES / EBU Audio

DATA Serial Machine Control

NK-3G144-X
Scalable 144x144 3G / HD / SD SDI Router

NK-3G72
Scalable 72x72 3G / HD / SD SDI Router

NK-3G64
Scalable 64x64 3G / HD / SD SDI Router

NK-3G Utility Series
3G / HD / SD SDI Utility Routers

NK-3G-RCP Series
3G / HD / SD SDI Utility Routers with Built-in Control Panels

NK-V
Analog Video Router Series

Video Routers

Audio Routers

Machine Control Routers

Control Panels

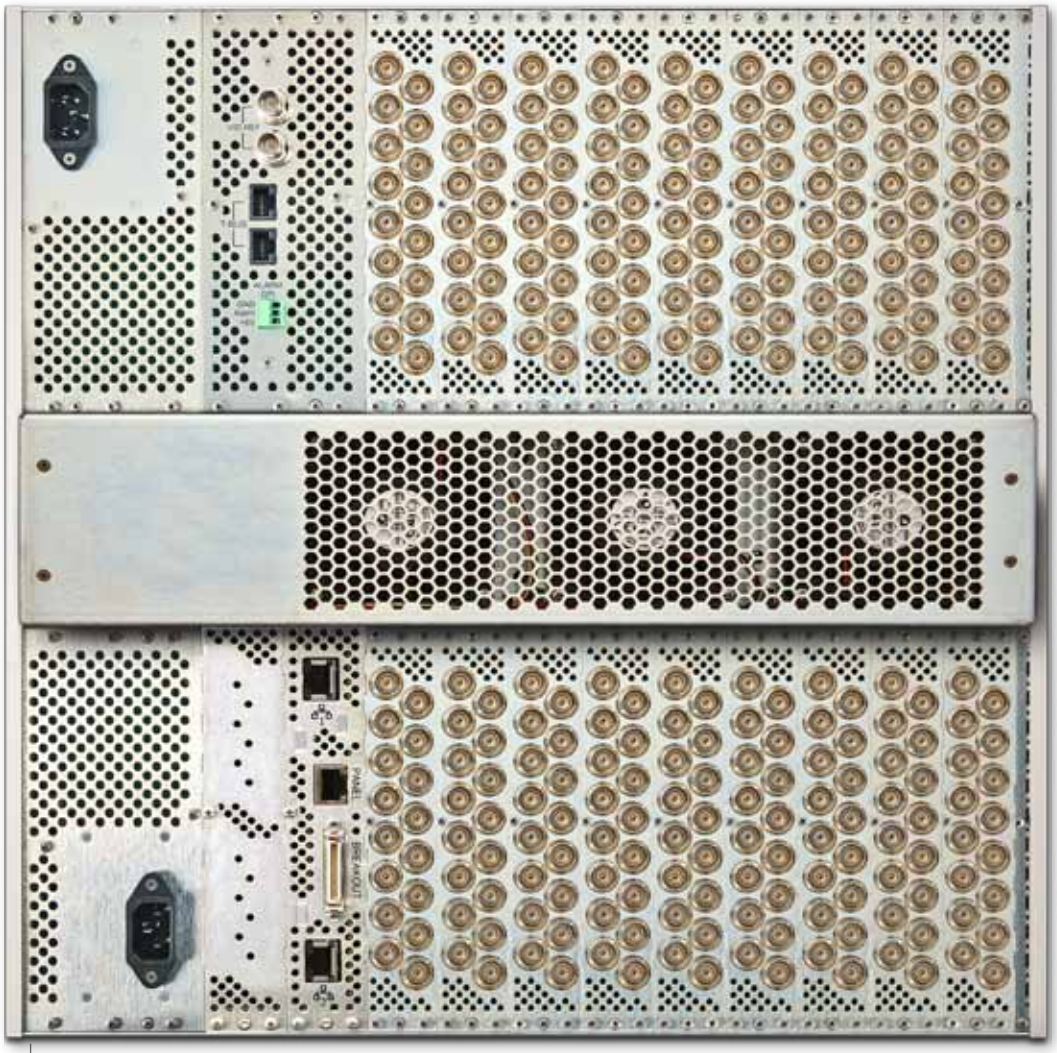
Control System Components

NK-3G144-X 3G HD SD

Scalable 144x144 3G / HD / SD SDI Router

Key Features

- Compact size
- Data rates 143Mb/s to 3Gb/s
- Accepts 3G / HD / SD SDI and DVB-ASI
- Supports SMPTE 259M, 292M, 344M and 424M
- 144x144 expandable from 8x8 in groups of 8
- Cable equalizing inputs
- Individually selectable reclocking outputs
- Hot swappable power supplies, I/O Cards and crosspoint cards
- Redundant universal power supplies included
- Forced air cooling with intelligent fan control
- Black burst or Tri-Level Sync input with programmable switch point
- Integrated NK Series Control
- Carbonite eXtreme ready
- Optional redundant crosspoint / control cards
- 5-year transferable warranty



NK-3G144-X

Technical Specifications

	NK-3G144-X
INPUTS	
Connection	75Ω BNC
Total # of Inputs	up to 144
Return Loss	>15dB 5MHz to 1.5 GHz >10dB 1.5GHz to 3.0GHz
Cable EQ	up to 100m Belden 1694 or equivalent
OUTPUTS	
Connection	75Ω BNC
Total # of Outputs	up to 144
Clocking	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI
Level	800mV p–p ±10%
Return Loss	>15dB 5MHz to 1.5 GHz >10dB 1.5GHz to 3.0GHz
PERFORMANCE	
Jitter	<0.2 UI additive
Data Rates	143Mb/s to 3Gb/s
Overshoot	<10%
Rise Time	automatic at SMPTE 259M, 259M, 292M, 344M, 424M & DVB-ASI
GENERAL	
Partitioning	up to 8 partitions with independent level assignment
Configuration	basic via web browser or comprehensive via DashBoard Control System via NK-IPS
Dimensions	10RU, depth 32.0cm
Power Consumption	<500W
Power Supply	+15 V DC, 32A

Specifications subject to change without prior notice.

Ordering Information

NK-3G144-X Routers

NK-3G144-X	144x144 3G / HD / SD SDI Router
NK-3G144(128)-X	128x128 3G / HD / SD SDI Router
NK-3G144(96)-X	96x96 3G / HD / SD SDI Router
NK-3G144(64)-X	64x64 3G / HD / SD SDI Router

NK-3G144-X Router Components

NK-3G-FRM-144-X	144x144 3G / HD / SD SDI Router Frame
NK-I3G	8 Channel 3G / HD / SD Input Card
NK-I3G-RC	Frame Connector Strip for two NK-I3G Cards
NK-O3G	8 Channel 3G / HD / SD Output Card
NK-O3G-RC	Frame Connector Strip for two NK-O3G Cards
NK-144X3G	Redundant 144x144 Crosspoint Board
NK-C3G	Redundant Controller
NK-P3G	Spare NK-3G Series Power Supply

NK-3G72 3G HD SD

Scalable 72x72 3G / HD / SD SDI Router

Key Features

- Compact size
- Data rates 143Mb/s to 3Gb/s
- Accepts 3G / HD / SD SDI and DVB-ASI
- Supports SMPTE 259M, 292M, 344M and 424M
- 72x72 expandable from 8x8 in groups of 8
- Cable equalizing inputs
- Reclocking outputs
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-3G72

Technical Specifications

	NK-3G72
INPUTS	
Connection	75Ω BNC
Total # of Inputs	up to 72
Return Loss	>15dB 5MHz to 1.5 GHz >10dB 1.5GHz to 3.0GHz
Cable EQ	100m Belden 1694 or equivalent
OUTPUTS	
Connection	75Ω BNC
Total # of Outputs	up to 72
Clocking	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI
Level	800mV p–p ±10%
Return Loss	>15dB 5MHz to 1.5 GHz, >10dB 1.5GHz to 3.0GHz
PERFORMANCE	
Jitter	<0.2 UI additive
Data Rates	143Mb/s to 3Gb/s
Overshoot	<10%
Rise Time	automatic at SMPTE 259M, 259M, 292M, 344M, 424M & DVB-ASI
GENERAL	
Partitioning	up to 8 partitions with independent level assignment
Configuration	basic via web browser or comprehensive via DashBoard Control System via NK-IPS
Dimensions	3RU, depth 12.0cm
Power Consumption	60W
Power Supply	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-3G72 Router

NK-3G72	72x72 3G / HD / SD SDI Router
NK-3G72(32)	32x32 3G / HD / SD SDI Router

NK-3G72 Router Components

NK-3G72-FRM	72x72 3G / HD / SD SDI Router Frame
NK-I3G72	8 Channel 3G / HD / SD Input Card
NK-O3G72	8 Channel 3G / HD / SD Output Card
NK-P3	Spare, Non-Redundant 100W, +15V Power Supply

NK-3G72 Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply*
NK-D12/P	NK-RP1/P Power Supply Cable for NK-3G72

*For more information on the rack mount power supply system, please see page 216

NK-3G64 3G HD SD

Scalable 64x64 3G / HD / SD SDI Router

Key Features

- Data rates 143Mb/s to 3Gb/s
- Accepts 3G / HD / SD SDI and DVB-ASI
- Supports SMPTE 259M, 292M, 344M and 424M
- 64x64 expandable to 72x72
- Cable equalizing inputs
- Reclocking outputs
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-3G64

Technical Specifications

	NK-3G64
INPUTS	
Connection	75Ω BNC
Total # of Inputs	64
Return Loss	>15dB 5MHz to 1.5 GHz >10dB 1.5GHz to 3.0GHz
Cable EQ	100m Belden 1694 or equivalent
OUTPUTS	
Connection	75Ω BNC
Total # of Outputs	64
Clocking	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI
Level	800mV p–p ±10%
Return Loss	>15dB 5MHz to 1.5 GHz, >10dB 1.5GHz to 3.0GHz
PERFORMANCE	
Jitter	<0.2 UI additive
Data Rates	143Mb/s to 3Gb/s
Overshoot	<10%
Rise Time	automatic at SMPTE 259M, 259M, 292M, 344M, 424M & DVB-ASI
GENERAL	
Partitioning	up to 8 partitions with independent level assignment
Configuration	basic via web browser or comprehensive via DashBoard Control System via NK-IPS
Dimensions	3RU, depth 12.0cm
Power Consumption	60W
Power Supply	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-3G64 Routers

NK-3G64	64x64 3G / HD / SD SDI Router
NK-3G64(32)	32x32 3G / HD / SD SDI Router

NK-3G64 Router Components

NK-3G64-FRM	64x64 3G / HD / SD SDI Router Frame
NK-I3G64	8 Channel 3G / HD / SD Input Card
NK-O3G64	8 Channel 3G / HD / SD Output Card
NK-P3	Spare, Non-Redundant 100W, +15V Power Supply

NK-3G64 Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply*
NK-D12/P	NK-RP1/P Power Supply Cable for NK-3G64

*For more information on the rack mount power supply system, please see page 216

NK-3G Utility Series 3G HD SD

3G / HD / SD SDI Utility Routers

Key Features

- Compact size
- Data rates 143Mb/s to 3Gb/s
- Cable equalizing inputs
- Accepts 3G / HD / SD SDI and DVB-ASI
- Supports SMPTE standards 259M, 292M, 344M, and 424M
- Reclocking outputs
- 16x4, 16x16, 34x34 fixed sizes
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-3G164

NK-3G16

NK-3G34

Technical Specifications

	NK-3G164	NK-3G16	NK-3G34
INPUTS			
Connection	75Ω BNC	75Ω BNC	75Ω BNC
Total # of Inputs	16	16	34
Return Loss	>15dB 5MHz to 1.5 GHz	>15dB 5MHz to 1.5 GHz	>10dB 1.5GHz to 1.5 GHz
Cable EQ	up to 100m Belden 1694 or equivalent	up to 100m Belden 1694 or equivalent	up to 100m Belden 1694 or equivalent
OUTPUTS			
Connection	75Ω BNC	75Ω BNC	75Ω BNC
Total # of Outputs	4	16	34
Clocking	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI
Level	800mV p–p ±10%	800mV p–p ±10%	800mV p–p ±10%
Return Loss	15dB 5MHz to 1.5 GHz	15dB 5MHz to 1.5 GHz	10dB 1.5GHz to 1.5 GHz
PERFORMANCE			
Jitter	<0.2 UI additive	<0.2 UI additive	<0.2 UI additive
Data Rates	143Mb/s to 3Gb/s	143Mb/s to 3Gb/s	143Mb/s to 3Gb/s
Overshoot	<10%	<10%	<10%
Rise Time	automatic at SMPTE 259M, 259M, 292M, 344M, 424M & DVB-ASI	automatic at SMPTE 259M, 259M, 292M, 344M, 424M & DVB-ASI	automatic at SMPTE 259M, 259M, 292M, 344M, 424M & DVB-ASI
GENERAL			
Partitioning	up to 8 partitions with independent level assignment		
Configuration	web browser via NK-IPS, DashBoard Control System via NK-IPS		
Dimensions	1RU, depth 6.4cm	1RU, depth 6.4cm	2RU, depth 6.4cm
Power Consumption	16W	16W	30W
Power Supply	+15 V DC	+15 V DC	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-3G164, NK-3G16 & NK-3G34 Routers

NK-3G164	16x4 3G / HD / SD SDI Router
NK-3G16	16x16 3G / HD / SD SDI Router
NK-3G34	34x34 3G / HD / SD SDI Router

NK-3G164, NK-3G16 & NK-3G34 Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply
NK-D12/PN	NK-RP1/P Power Supply Cable for NK-3G164, NK-3G16 & NK-3G34

NK-3G164, NK-3G16 & NK-3G34 External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply*
NK-DRY	Y Cable for two NK-P1 External Power Supplies

*For more information on the rack mount power supply system, please see page 216

NK-3G-RCP Series 3G HD SD

3G / HD / SD SDI Utility Routers with Built-in Control Panels

Key Features

- Self contained routing matrix and RCP-NK1 control panel
- 1RU panel / router combination
- No external control system required
- Available on 16x16 and 16x4 SDI routers
- Ideal for high density, standalone systems
- 5-year transferable warranty

NK-3G164-RCP

NK-3G16-RCP

Technical Specifications

	NK-3G164-RCP	NK-3G16-RCP
INPUTS		
Connection	75Ω BNC	75Ω BNC
Total # of Inputs	16	16
Return Loss	>15dB 5MHz to 1.5 GHz	>15dB 5MHz to 1.5 GHz
Cable EQ	up to 100m Belden 1694 or equivalent	up to 100m Belden 1694 or equivalent
OUTPUTS		
Connection	75Ω BNC	75Ω BNC
Total # of Outputs	4	16
Clocking	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI
Level	800mV p–p ±10%	800mV p–p ±10%
Return Loss	15dB 5MHz to 1.5 GHz	>15dB 5MHz to 1.5 GHz,
PERFORMANCE		
Jitter	<0.2 UI additive	<0.2 UI additive
Data Rates	143Mb/s to 3Gb/s	143Mb/s to 3Gb/s
Overshoot	<10%	<10%
Rise Time	automatic at SMPTE 259M, 259M, 292M, 344M, 424M & DVB-ASI	automatic at SMPTE 259M, 259M, 292M, 344M, 424M & DVB-ASI
GENERAL		
Partitioning	up to 8 partitions with independent level assignment	
Configuration	web browser or comprehensive via DashBoard Control System via NK-IPS	
Dimensions	1RU, depth 6.4cm	1RU, depth 6.4cm
Power Consumption	16W	16W
Power Supply	+15 V DC	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

3G / HD / SD SDI Routers

NK-3G164-RCP	16x4 3G / HD / SD SDI Router with RCP-NK1 Control Panel
NK-3G16-RCP	16x16 3G / HD / SD SDI Router with RCP-NK1 Control Panel

NK-3G164 & NK-3G16 Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply
NK-D12/PN	NK-RP1/P Power Supply Cable for NK-3G164 & NK-3G16

NK-3G164 & NK-3G16 External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply*
NK-DRY	Y Cable for two NK-P1 External Power Supplies

*For more information on the rack mount power supply system, please see page 216

NK-V AN-VID

Analog Video Router Series

Key Features

- Compact size
- Wide band router with 230MHz bandwidth
- Suitable for NTSC, PAL, RGB, YUV, bi-level and tri-level reference routing
- Supports standard definition, high-definition and wide band display signals
- 16x4, 16x16, 32x32 fixed sizes
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-V164-HQ

NK-V16-HQ

NK-V32-HQ

Technical Specifications

	NK-V164-HQ	NK-V16-HQ	NK-V32-HQ
INPUTS			
Connection	75Ω BNC	75Ω BNC	75Ω BNC
Total # of Inputs	16	16	32
Nominal Input Level	1 V p-p	1 V p-p	1 V p-p
Maximum Input Level	2 V p-p	2 V p-p	2 V p-p
Clamping Method	AC coupled with sync-tip clamping		
Clamping DC Adjustment	between blanking = 0 V and sync-tip = 0V		
Return Loss	44dB	44dB	44dB
OUTPUTS			
Connection	75Ω BNC	75Ω BNC	75Ω BNC
Total # of Outputs	4	16	32
Level	1 V p-p	1 V p-p	1 V p-p
Coupling	DC coupled	DC coupled	DC coupled
Return Loss	30dB	30dB	30dB
PERFORMANCE			
Differential Gain	0.05%	0.05%	0.05%
Differential Phase	0.05°	0.05°	0.05°
Frequency Response	30MHz, ±0.1dB 60MHz, ±1dB 230MHz, -3dB	30MHz, ±0.1dB 60MHz, ±1dB 230MHz, -3dB	<30MHz, ±0.1dB 60MHz, ±1dB 230MHz, -3dB
Noise	-76dB peak	-76dB peak	-76dB peak
Crosstalk	-60dB, 5MHz	-60dB, 5MHz	-60dB, 5MHz
Transmit Time	2ns	2ns	2ns
Timing Scatter	0.5° Fsc	0.5° Fsc	0.5° Fsc
GENERAL			
Partitioning	up to 8 partitions with independent level assignment		
Configuration	web browser or comprehensive via DashBoard Control System configuration via NK-IPS		
Dimensions	1RU, depth 6.4cm	1RU, depth 6.4cm	2RU, depth 6.4cm
Power Consumption	12W	12W	26W
Power Supply	±15 V DC	±15 V DC	±15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-V Routers

NK-V164-HQ	16x4 Analog Video Router
NK-V16-HQ	16x16 Analog Video Router
NK-V32-HQ	32x32 Analog Video Router

NK-V Rack Mount Redundant Power

NK-RP1/PN	Rack Mount, 1RU, 100W, ±15V Redundant Power Supply
NK-D12/PN	NK-RP1/PN Power Supply Cable for NK-V164-HQ, NK-V16-HQ & NK-V32-HQ

NK-V External Redundant Power

NK-PN1	Spare or Redundant, 50W, ±15V External Power Supply*
NK-DRY	Y Cable for two NK-PN1 External Power Supplies

*For more information on the rack mount power supply system, please see page 216

NK-D64-75
AES / EBU Digital Audio Router (75Ω)

NK-D-75 Series
AES / EBU Digital Audio Router Series (75Ω)

NK-D-75-RCP Series
AES / EBU Digital Audio Routers with Built-in Control Panels (75Ω)

NK-D64-110
AES / EBU Digital Audio Router (110Ω)

NK-D-110 Series
AES / EBU Digital Audio Router Series (110Ω)

NK-D-110-RCP Series
ASE / EBU Digital Audio Routers with Built-in Control Panels (110Ω)

NK-A64
Stereo Analog Audio Router

NK-A-HQ Series
Stereo Analog Audio Router Series

Video Routers

Audio Routers

Machine Control Routers

Control Panels

Control System Components

NK-D64-75 AES

AES / EBU Digital Audio Router (75Ω)

Key Features

- Compact size
- AES / EBU routing system
- Data rates 32 to 192KHz
- Passes Dolby® and other compressed audio
- 75Ω unbalanced BNC inputs and outputs
- 64x64 expandable from 8x8 in groups of 8
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-D64-75

Technical Specifications

	NK-D64-75
INPUTS	
Connection	75Ω unbalanced BNC
Total # of Inputs	64
Level	1 V p-p
Cable EQ	up to 300m Belden 1694
OUTPUTS	
Connection	75Ω unbalanced BNC
Total # of Outputs	64
Clocking	non-reclocking
Level	1 V p-p
PERFORMANCE	
Jitter	<2ns (0.013 UI)
Data Rates	32 to 192kHz
GENERAL	
Partitioning	up to 8 partitions with independent level assignment
Configuration	web browser or comprehensive via DashBoard Control System configuration via NK-IPS
Dimensions	3RU, depth 12.0cm
Power Consumption	10W
Power Supply	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-D64-75 Routers

NK-D64-75	64x64 AES / EBU Digital Audio Router (75Ω)
NK-D64-75(32)	32x32 AES / EBU Digital Audio Router (75Ω)

NK-D64-75 Router Components

NK-D-FRM-75	64x64 AES / EBU Digital Audio Router (75Ω) Frame
NK-IDE-75	8 Channel AES / EBU Input Card (75Ω)
NK-ODE-75	8 Channel AES / EBU Output Card (75Ω)
NK-P3	Spare, Non-Redundant 100W, +15V Power Supply

NK-D64-75 Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply*
NK-D12/P	NK-RP1/P Power Supply Cable for NK-D64-75

*For more information on the rack mount power supply system, please see page 216

NK-D-75 Series AES

AES / EBU Digital Audio Router Series (75Ω)

Key Features

- Compact size
- AES / EBU routing system
- Data rates 32 to 192KHz
- Passes Dolby® and other compressed audio
- 75Ω unbalanced BNC inputs and outputs
- 16x4, 16x16, 32x32 fixed sizes
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-D164-75

NK-D16-75

NK-D32-75

Technical Specifications

	NK-D164-75	NK-D16-75	NK-D32-75
INPUTS			
Connection	75Ω unbalanced BNC	75Ω unbalanced BNC	75Ω unbalanced BNC
Total # of Inputs	16	16	32
Level	1 V p-p	1 V p-p	1 V p-p
Cable EQ	up to 300m Belden 1694	up to 300m Belden 1694	up to 300m Belden 1694
OUTPUTS			
Connection	75Ω unbalanced BNC	75Ω unbalanced BNC	75Ω unbalanced BNC
Total # of Outputs	4	16	32
Clocking	non-reclocking	non-reclocking	non-reclocking
Level	1 V p-p	1 V p-p	1 V p-p
PERFORMANCE			
Jitter	<2ns (0.013 UI)	<2ns (0.013 UI)	<2ns (0.013 UI)
Data Rates	32 to 192kHz	32 to 192kHz	32 to 192kHz
GENERAL			
Partitioning	up to 8 partitions with independent level assignment		
Configuration	web browser or comprehensive via DashBoard Control System configuration via NK-IPS		
Dimensions	1RU, depth 6.4cm	1RU, depth 6.4cm	2RU, depth 6.4cm
Power Consumption	7.5W	7.5W	15W
Power Supply	+15 V DC	+15 V DC	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-D164-75, NK-D16-75 & NK-D32-75 Routers

NK-D164-75	16x4 AES / EBU Digital Audio Router (75Ω)
NK-D16-75	16x16 AES / EBU Digital Audio Router (75Ω)
NK-D32-75	32x32 AES / EBU Digital Audio Router (75Ω)

NK-D164-75, NK-D16-75 & NK-D32-75 Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply
NK-D12/PN	NK-RP1/P Power Supply Cable for NK-D164-75, NK-D16-75 & NK-D32-75

NK-D164-75, NK-D16-75 & NK-D32-75 External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply*
NK-DRY	Y Cable for Two NK-P1 External Power Supplies

*For more information on the rack mount power supply system, please see page 216

NK-D-75-RCP Series AES

AES / EBU Digital Audio Routers with Built-in Control Panels (75Ω)

Key Features

- Self contained routing matrix and RCP-NK1 control panel
- 1RU panel / router combination
- No external control system required
- Available on 16x16 and 16x4 SDI AES routers
- Ideal for high density, standalone systems

NK-D164-75-RCP

NK-D16-75-RCP

Technical Specifications

	NK-D164-75-RCP	NK-D16-75-RCP
INPUTS		
Connection	75Ω unbalanced BNC	75Ω unbalanced BNC
Total # of Inputs	16	16
Level	1 V p-p	1 V p-p
Cable EQ	up to 300m Belden 1694	up to 300m Belden 1694
OUTPUTS		
Connection	75Ω unbalanced BNC	75Ω unbalanced BNC
Total # of Outputs	4	16
Clocking	non-reclocking	non-reclocking
Level	1 V p-p	1 V p-p
PERFORMANCE		
Jitter	<2ns (0.013 UI)	<2ns (0.013 UI)
Data Rates	32 to 192kHz	32 to 192kHz
GENERAL		
Partitioning	up to 8 partitions with independent level assignment	
Configuration	web browser or comprehensive via DashBoard Control System configuration via NK-IPS	
Dimensions	1RU, depth 6.4cm	1RU, depth 6.4cm
Power Consumption	7.5W	7.5W
Power Supply	+15 V DC	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

AES Routers

NK-D16-75-RCP	16x4 Unbalanced AES Router with RCP NK1 Control Panel
NK-D164-75-RCP	16x4 Unbalanced AES Router with RCP NK1 Control Panel

NK-D164-75-RCP & NK-D16-75-RCP Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply
NK-D12/PN	NK-RP1/P Power Supply Cable for NK-D164-75-RCP & NK-D16-75-RCP

NK-D164-75-RCP & NK-D16-75-RCP External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply*
NK-DRY	Y Cable for two NK-P1 External Power Supplies

*For more information on the rack mount power supply system, please see page 216

NK-D64-110 AES

AES / EBU Digital Audio Router (110Ω)

Key Features

- Compact size
- AES / EBU routing system
- Data rates 32 to 192KHz
- Passes Dolby® and other compressed audio
- 110Ω balanced DB25 inputs and outputs
- 64x64 expandable from 8x8 in groups of 8
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-D64-110

Technical Specifications

	NK-D64-110
INPUTS	
Connection	110Ω balanced DB25 connectors
Total # of Inputs	64
Level	1-7 V p-p
Cable EQ	up to 100m Belden B1800B
OUTPUTS	
Connection	110Ω balanced DB25 connectors
Total # of Outputs	64
Clocking	non-reclocking
Level	2-4 V p-p
PERFORMANCE	
Jitter	<2ns (0.013 UI)
Data Rates	32 to 192kHz
GENERAL	
Partitioning	up to 8 partitions with independent level assignment
Configuration	basic web browser via NK-IPS or comprehensive via DashBoard Control System & NK-IPS
Dimensions	3RU, depth 12.0cm
Power Consumption	10W
Power Supply	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-D64-110 Routers

NK-D64-110	64x64 AES / EBU Digital Audio Router (110Ω)
NK-D64-110(32)	32x32 AES / EBU Digital Audio Router (110Ω)

NK-D64-110 Router Components

NK-D-FRM-110	64x64 AES / EBU Digital Audio Router (110Ω) Frame
NK-IDE-110	8 Channel AES / EBU Input Card (110Ω)
NK-ODE-110	8 Channel AES / EBU Output Card (110Ω)
NK-P3	Spare, Non-Redundant 100W, +15V Power Supply

NK-D64-110 Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply*
NK-D12/P	NK-RP1/P Power Supply Cable for NK-D64-110

*For more information on the rack mount power supply system, please see page 216

NK-D-110 Series AES

AES / EBU Digital Audio Router Series (110Ω)

Key Features

- Compact size
- AES / EBU routing system
- Data rates 32 to 192KHz
- Passes Dolby® and other compressed audio
- 110Ω balanced DB25 inputs and outputs
- 16x4, 16x16, 32x32 fixed sizes
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-D164-110

NK-D16-110

NK-D32-110

Technical Specifications

	NK-D164-110	NK-D16-110	NK-D32-110
INPUTS			
Connection	110Ω balanced DB25 connectors	110Ω balanced DB25 connectors	110Ω balanced DB25 connectors
Total # of Inputs	16	16	32
Level	1-7 V p-p	1-7 V p-p	1-7 V p-p
Cable EQ	up to 100m Belden B1800B	up to 100m Belden B1800B	up to 100m Belden B1800B
OUTPUTS			
Connection	110Ω unbalanced DB25 connectors	110Ω unbalanced DB25 connectors	110Ω unbalanced DB25 connectors
Total # of Outputs	4	16	32
Clocking	non-reclocking	non-reclocking	non-reclocking
Level	2-4 V p-p	2-4 V p-p	2-4 V p-p
PERFORMANCE			
Jitter	<2ns (0.013 UI)	<2ns (0.013 UI)	<2ns (0.013 UI)
Data Rates	32 to 192kHz	32 to 192kHz	32 to 192kHz
GENERAL			
Partitioning	up to 8 partitions with independent level assignment		
Configuration	basic web browser via NK-IPS or comprehensive via DashBoard & NK-IPS		
Dimensions	1RU, depth 6.4cm	1RU, depth 6.4cm	2RU, depth 6.4cm
Power Consumption	7.5W	7.5W	15W
Power Supply	+15 V DC	+15 V DC	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-D164-110, NK-D16-110 & NK-D32-110 Routers

NK-D164-110	16x4 AES / EBU Digital Audio Router (110Ω)
NK-D16-110	16x16 AES / EBU Digital Audio Router (110Ω)
NK-D32-110	32x32 AES / EBU Digital Audio Router (110Ω)

NK-D164-110, NK-D16-110 & NK-D32-110 Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply
NK-D12/PN	NK-RP1/P Power Supply Cable for NK-D164-110, NK-D16-110 & NK-D32-110

NK-D164-110, NK-D16-110 & NK-D32-110 External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply*
NK-DRY	Y Cable for Two NK-P1 External Power Supplies

*For more information on the rack mount power supply system, please see page 216

NK-D-110-RCP Series AES

ASE / EBU Digital Audio Routers with Built-in Control Panels (110Ω)

Key Features

- Self contained routing matrix and RCP-NK1 control panel
- 1RU panel / router combination
- No external control system required
- Available on 16x16 and 16x4 SDI AES routers
- Ideal for high density, standalone systems

NK-D164-110-RCP

NK-D16-110-RCP

Technical Specifications

	NK-D164-110-RCP	NK-D16-110-RCP
INPUTS		
Connection	110Ω balanced DB25 connectors	110Ω balanced DB25 connectors
Total # of Inputs	16	16
Level	1-7 V p-p	1-7 V p-p
Cable EQ	up to 100m Belden B1800B	up to 100m Belden B1800B
OUTPUTS		
Connection	110Ω unbalanced DB25 connectors	110Ω unbalanced DB25 connectors
Total # of Outputs	4	16
Clocking	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI	automatic reclock at SMPTE 259M, 292M, 344M, 424M & DVB-ASI
Level	2-4 V p-p	2-4 V p-p
PERFORMANCE		
Jitter	<2ns (0.013 UI)	<2ns (0.013 UI)
Data Rates	32 to 192kHz	32 to 192kHz
GENERAL		
Partitioning	up to 8 partitions with independent level assignment	
Configuration	basic web browser via NK-IPS or comprehensive via DashBoard & NK-IPS	
Dimensions	1RU, depth 6.4cm	1RU, depth 6.4cm
Power Consumption	7.5W	7.5W
Power Supply	+15 V DC	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

AES Routers

NK-D16-110-RCP	16x16 Balanced AES Router with RCP NK1 Control Panel
NK-D164-110-RCP	16x4 Balanced AES Router with RCP NK1 Control Panel

NK-D164-110-RCP & NK-D16-110-RCP Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply
NK-D12/PN	NK-RP1/P Power Supply Cable for NK-D164-110-RCP & NK-D16-110-RCP

NK-D164-110-RCP & NK-D16-110-RCP External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply*
NK-DRY	Y Cable for two NK-P1 External Power Supplies

*For more information on the rack mount power supply system, please see page 216

NK-A64 AN-AUD

Stereo Analog Audio Router

Key Features

- Compact size
- Balanced inputs (can be wired unbalanced)
- Wide band frequency response
- Common mode rejection >60dB
- 64x64 expandable from 8x8 in groups of 8
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-A64

Technical Specifications

	NK-A64
INPUTS	
Connection	DB25 connector
Total # of Inputs	64
Input Impedance	24kΩ
Nominal Input Level	+4dBu or -10dBu (solder link selectable)
Maximum Input Level	+24dBu
OUTPUTS	
Connection	balanced active differential DB-25
Total # of Outputs	64
Output Impedance	50Ω
Nominal Output Level	+4dBu or -10dBu (selectable via solder links per output)
Maximum Output Level	+24dBu
PERFORMANCE	
Frequency Response	±0.1 dB 20Hz to 20kHz -3dB, 100kHz
Distortion	0.005%
Noise	-90dB below +4dBu
Crosstalk	below noise
GENERAL	
Number of Levels	dual independent crosspoint layers
Control Level	no
Partitioning	up to 8 partitions per layer with independent level assignment
Configuration	web browser via NK-IPS, DashBoard Control System via NK-IPS
Dimensions	3RU, depth 12.0cm
Power Consumption	75W
Power Supply	±15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-A64 Routers

NK-A64	64x64 Stereo Analog Audio Router
NK-A64(32)	32x32 Stereo Analog Audio Router

NK-A64 Router Components

NK-A-FRM	64x64 Stereo Analog Audio Router Frame
NK-IA	8 Channel Stereo Analog Input Card
NK-OA	8 Channel Stereo Analog Output Card
NK-P3	Spare, Non-Redundant 100W, +15V Power Supply

NK-A64 Rack Mount Redundant Power

NK-RP1/PN	Rack Mount, 1RU, 100W, ±15V Redundant Power Supply*
NK-D12/P	NK-RP1/PN Power Supply Cable for NK-A64

*For more information on the rack mount power supply system, please see page 216

NK-A-HQ Series AN-AUD

Stereo Analog Audio Router Series

Key Features

- Compact size
- Balanced inputs (can be wired unbalanced)
- Wide band frequency response
- Common mode rejection >60dB
- 16x4, 16x16, 32x32 fixed sizes
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-A164-HQ

NK-A16-HQ

NK-A32-HQ

Technical Specifications

	NK-A164-HQ	NK-A16-HQ	NK-A32-HQ
INPUTS			
Connection	DB25 connector	DB25 connector	DB25 connector
Total # of Inputs	16	16	32
Input Impedance	24kΩ	24kΩ	24kΩ
Nominal Input Level	+4dBu or -10dBu (solder link selectable)		
Maximum Input Level	+24dBu	+24dBu	+24dBu
OUTPUTS			
Connection	balanced active differential DB-25		
Total # of Outputs	4	16	32
Output Impedance	50Ω	50Ω	50Ω
Nominal Output Level	+4dBu or -10dBu (selectable via solder links per output)		
Maximum Output Level	+24dBu	+24dBu	+24dBu
PERFORMANCE			
Frequency Response	±0.1 dB 20Hz to 20kHz -3dB, 100kHz	±0.1 dB 20Hz to 20kHz -3dB, 100kHz	±0.1 dB 20Hz to 20kHz -3dB, 100kHz)
Distortion	0.005%	0.005%	0.005%
Noise	-90dB below +4dBu	-90dB below +4dBu	-90dB below +4dBu
Crosstalk	below noise	below noise	below noise
GENERAL			
Number of Levels	dual independent crosspoint layers		
Control Level	no	no	no
Partitioning	up to 8 partitions per layer with independent level assignment		
Configuration	web browser or comprehensive via DashBoard Control System configuration via NK-IPS		
Dimensions	1RU, depth 6.4cm	1RU, depth 6.4cm	2RU, depth 6.4cm
Power Consumption	19W	19W	38W
Power Supply	±15 V DC	±15 V DC	±15 V DC

Specifications subject to change without prior notice.

Ordering Information

NK-A164-HQ, NK-A16-HQ & NK-A32-HQ Routers

NK-A164-HQ	16x4 Stereo Analog Audio Router
NK-A16-HQ	16x16 Stereo Analog Audio Router
NK-A32-HQ	32x32 Stereo Analog Audio Router

NK-A164-HQ, NK-A16-HQ & NK-A32-HQ Rack Mount Redundant Power

NK-RP1/PN	Rack Mount, 1RU, 100W, ±15V Redundant Power Supply
NK-D12/PN	NK-RP1/PN Power Supply Cable for NK-A164-HQ, NK-A16-HQ & NK-A32-HQ

NK-A164-HQ, NK-A16-HQ & NK-A32-HQ External Redundant Power

NK-PN1	Spare or Redundant, 50W, ±15V External Power Supply*
NK-DRY	Y Cable for Two NK-PN1 External Power Supplies

*For more information on the rack mount power supply system, please see page 216

NK-M Series
Machine Control / Data Router Series

Video Routers

Audio Routers

Machine Control Routers

Control Panels

Control System Components

NK-M Series DATA

Machine Control / Data Router Series

Key Features

- Compact size
- Supports RS-422
- True reciprocal switching
- Allows one master to multiple slaves
- Auto port direction switching
- 16 port and 32 port fixed sizes
- Excellent performance and specifications
- Low power consumption
- Integrated NK Series Control
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-M16

NK-M32

Technical Specifications

	NK-M16	NK-M32
INPUTS		
Connection	DB-9 female connector / chassis	DB-9 female connector / chassis
Total # of Inputs	16	32
Electrical Standard	RS-422	RS-422
PERFORMANCE		
Data Rate	up to 115.2kBd	up to 115.2kBd
GENERAL		
Configuration	web browser via NK-IPS DashBoard Control System via NK-IPS	
Dimensions	1RU, depth 6.4cm	2RU, depth 6.4cm
Power Consumption	9W	15W
Power Supply	+15 V DC	+15 V DC

Specifications subject to change without prior notice.

Ordering Information

Machine Control / Data Routers

NK-M16	16 Port RS-422 Machine Control Router
NK-M32	32 Port RS-422 Machine Control Router

Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply
NK-D12/PN	NK-RP1/P Power Supply Cable for NK-M16 & NK-M32

External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply*
NK-DRY	Y Cable for Two NK-P1 External Power Supplies

*For more information on the rack mount power supply system, please see page 216

RCP-NK1
Local or Remote Control Panel

RCP-NKM
Remote Control Panel

RCP-NKQ
Remote Control Panel

Video Routers

Audio Routers

Machine Control Routers

Control Panels

Control System Components

RCP-NK1

Local or Remote Control Panel

Key Features

- 40 fully illuminated LED backlit buttons
- Slim design: 1RU, depth 4.4cm
- Full function programmable control panel
- Configurable as cut-bus, multi-cutbus or menu driven source / destination switching control panel
- Control up to 8 levels, across 16 breakaways
- Removable keycaps for labeling of button functions using transparent inserts
- Can be mounted on the front of any NK-16 router, providing an integrated 1RU routing and control solution
- Phantom-powered via T-Bus
- 5-year transferable warranty

RCP-NK1

Overview

The RCP-NK1 is a simple and cost-effective control panel that can be used in a wide variety of applications.

Ideally suited as a menu driven source / destination switching control panel for small routers or as a cut-bus or multi-cutbus control panel for any sized router, the RCP-NK1 features 40 soft, fully programmable backlit keys arranged in a 32 + 8 configuration for convenient function key layout.

Each button can be configured to operate as a source, destination, breakaway, level select or macro function. Additionally protect, take and panel lock functions can be programmed to any button. Using source and destination shift buttons, a single RCP-NK1 can access up to 48 sources or destinations.

Multiple RCP-NK1's can be tied together to operate as a single, larger panel. By doing this, the tied RCP-NK1's can operate as a larger menu driven source / destination switching panel, or a larger cut bus panel with a single button per source access.

The variable backlight allows labels to be read in low light control room conditions, making this panel ideal for a wide range of environments.

Ordering Information

RCP-NK1	40 LED Illuminated Button Local / Remote Control Panel

RCP-NK1 Applications

NK-A16-HQ

RCP-NK1

Menu driven source / destination switching control for a router up to 16 x 16

NK-D32-75

Two Linked **RCP-NK1** Panels

Two linked panels can be used as menu driven source / destination switching control for a router up to 32 x 32

NK-3G72

RCP-NK1

Satellite panel to control a limited number of sources and destinations for any router

RCP-NK1

Macro panel to quickly restore saved configurations or commonly made switches

Two Linked **RCP-NK1** Panels

Two linked panels can be used as a larger cut bus panel

RCP-NKM

Remote Control Panel

Key Features

- 40 fully illuminated LED backlit buttons
- Backlit 16x2 LCD display
- Slim design: 1RU, depth 4.4cm
- Full function, programmable control panel
- Configurable as cut-bus, multi-cutbus or menu driven source / destination switching control panel
- Control up to 32 levels, across 16 breakaways
- Removable keycaps for labeling of button functions using transparent inserts
- Universal power supply included
- 5-year transferable warranty

RCP-NKM

Overview

The RCP-NKM is the most popular NK Series control panel and finds a home in a wide range of applications due to its familiarity, flexibility and cost-effectiveness.

The RCP-NKM has all of the same button programmability as the RCP-NK1 (source, destination, breakaway, level select, macro, protect, take and panel lock), and adds a backlit 16x2 LCD display for display of source and destination names, system warnings and errors.

Additionally, the RCP-NKM adds the ability to create menus which enables the grouping of sources and destinations based on physical requirements (studios, edit suites, QC racks) or categories (servers, cameras, monitors). Menu navigation buttons programmed onto the RCP-NKM also enable quick access between menus.

Multiple RCP-NKMs can be tied together to operate as a single, larger panel. By doing this, the tied RCP-NKMs can operate as a larger menu driven source / destination switching panel or a larger cut bus panel with a single button per source access. The variable backlight allows labels to be read in low light control room conditions, making this panel ideal for a wide range of environments.

Ordering Information

RCP-NKM	40 Button and LCD Display Control Panel
NK-5V2A	Shelf Spare Power Supply for the RCP-NKM

RCP-NKM Application

NK-3G72

RCP-NKM

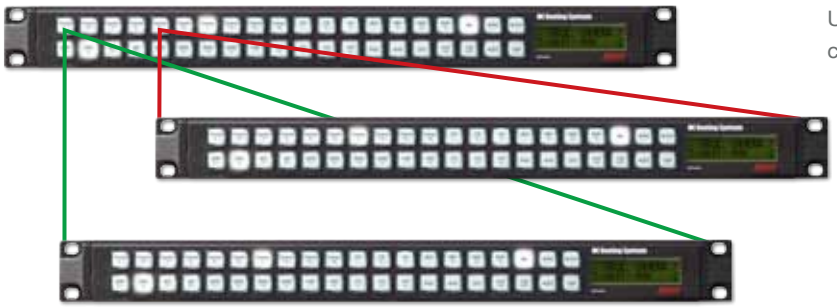
Using menus, menu driven source / destination switching control of routers up to 72 x72

RCP-NKM

Satellite panel to control a limited number of sources and destinations for any router

RCP-NKM Features

Quickly see the source routed to each destination on the display by selecting a destination



Using menus, users can quickly access specific categories of sources and destinations

RCP-NKQ

Remote Control Panel

Key Features

- 17 backlit graphic LCD keys
- Slim design: 1RU, depth 4.4cm
- Full function, programmable control panel
- Menu driven and single key configurations
- 8 backlight colors
- Unique multi-level menu programming
- Configure with web browser or DashBoard Control System
- Universal power supply included
- 5-year transferable warranty

RCP-NKQ

Overview

The RCP-NKQ offers unmatched flexibility and ease-of-use. Ideal for use in OB trucks or production houses where configurations change regularly and is equally useful in studios where unlimited configurations enable fast and simple customized setups of each panel.

The RCP-NKQ remote control panel offers 17 colored backlit graphic LCD keys with multiple menus, enabling users to easily navigate through the system with just a few key presses.

Using the menu function, users can quickly navigate through hundreds of sources and destinations, making it an ideal menu driven source / destination switching panel for any size router.

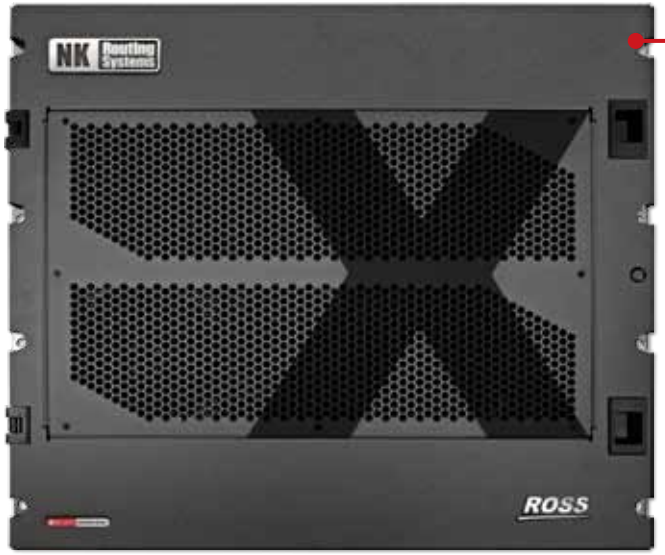
As with all the control panels, each button can be programmed to function as a source, destination, breakaway, level select, macro, protect, take and panel lock button.

Custom key labels (up to 10 characters across 2 lines) and colors are all user-definable. These labels are configured offline using the DashBoard Control System, and then sent to the RCP-NKQ panel to change its configuration.

Ordering Information

RCP-NKQ	17 LCD Illuminated Button Control Panel
NK-5V2A	Shelf Spare Power Supply for the RCP-NKQ

RCP-NKQ Applications



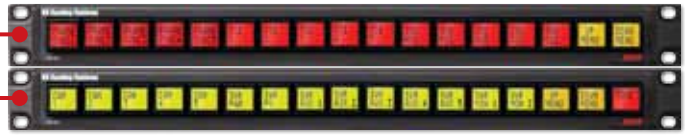
NK-3G144-X

RCP-NKQ

Macro panel to quickly restore saved configurations or commonly made switches

RCP-NKQ

Engineering menu driven source / destination switching control panel



Two Linked **RCP-NKQ** Panels

Two linked panels, one to select sources and the other to select destinations for even faster menu driven source / destination switching control

RCP-NKQ Features

Press and hold a destination button to see the source currently routed to that destination

Menu navigation buttons enable the user to quickly scroll through the list of sources or destinations

NK-IPS
Network Bridge

NK-NET
T-Bus to Ethernet Adapter

NK-VRC
Virtual Routing Core

NK-GPI
General Purpose Interface

NK-3RD
Third Party Router Interface

NK-SCP/A
ASCII / RS-232 Control Interface

NK-SCP/K2
RS-485 Control Interface

NK-RP1
Redundant Power Supply

Video Routers

Audio Routers

Machine Control Routers

Control Panels

Control System Components

NK-IPS

Network Bridge

Key Features

- Compact size: 1RU, depth 2.4cm
- Password protection to prevent unauthorized changes
- Front panel status and communications indicators
- 8 port hub for T-Bus connected devices
- 10/100 Ethernet port
- Supports static or DHCP assigned IP addressing
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-IPS

The NK-IPS Network Bridge is the external gateway to all NK Series devices for configuration, firmware upgrades, monitoring and remote control.

The NK-IPS provides an Ethernet port that connects to a LAN or directly to a computer. This port is used to communicate to a web browser or DashBoard Control System to configure and control the NK Series Routing System.

NK-IPS is also equipped with a buffered 8-port T-Bus hub. T-Bus is the RS-485 based communications system the NK Series uses to communicate between devices such as control panels and frames. Each T-Bus port can support multiple devices in a daisy chain configuration.

Alarm status and monitoring is displayed via DashBoard control system, enabling users to locate errors and troubleshoot problems.

Ordering Information

NK-IPS	Network IP Configuration Device

NK-IPS External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply
NK-DRY	Y Cable for two NK-P1 External Power Supplies

NK-IPS Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply*
NK-D12/P	NK-RP1/P Power Supply Cable for NK-IPS

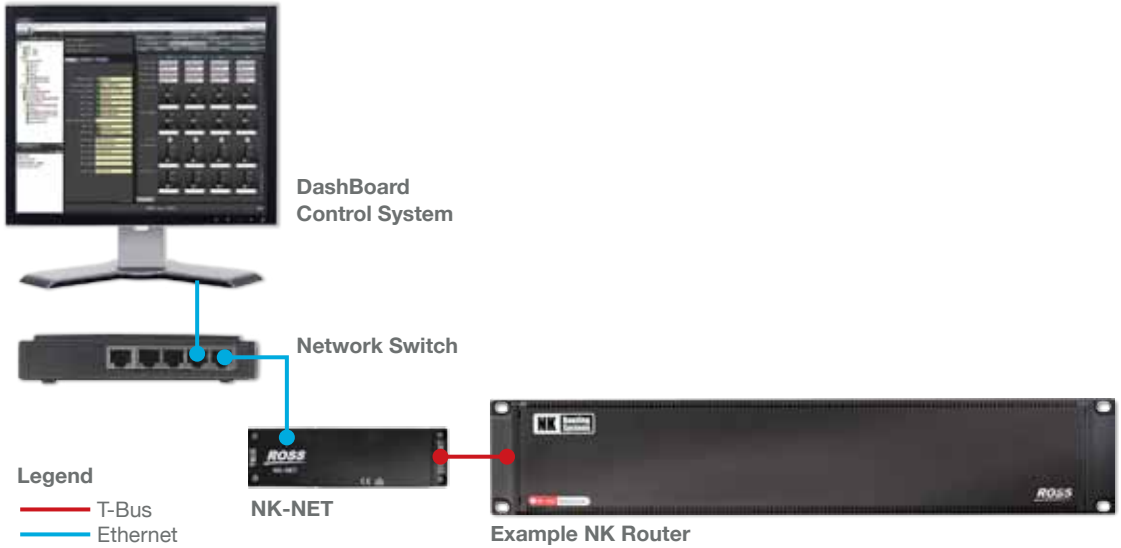
*For more information on the rack mount power supply system, please see page 216

NK-NET

T-BUS to Ethernet Adapter

Key Features

- Enables Ethernet Configuration of any NK Router from Dashboard
- Ships FREE and automatically included with every NK Router (orderable separately as well for legacy installations)
- Configures both the router and up to 4 T-BUS connected NK panels
- Replaces the need for an IPS for simple, router installations – saves costs, saves space, saves complexity.
- Powered by T-BUS connection, no external power supply required



Overview

In an effort to simplify NK routing solutions, and provide a significant cost savings and provide a more cost-effective routing solution, Ross has introduced the new NK-NET configuration dongle. This simple, unobtrusive dongle provides users the ability to configure a router, and up to 4 NK remote control panels via Dashboard, without the need of an NK-IPS. NK-NET ships at no extra charge with the purchase of all NK series routers. NK-NET can also be purchased as a stand-alone item for legacy systems.

Restrictions of NK-NET Applications

- NK-NET requires the router to host the connection. Use NK-IPS to support panels directly.
- NK-NET does not support advanced mapping. Use VRC for virtual routing configurations.
- NK-NET only allows a single Dashboard connection.
- NK-NET does not support MC-1 or Carbonite Extreme.

Ordering Information

NK-NET	T-BUS to Ethernet Adapter (Ships FREE and automatically included with every NK Router)

NK-VRC

Virtual Routing Core

Key Features

- Virtual routing controller
- Provides virtual routing and resource management for any NK Series Routing System
- Allows physical sources and destinations to be mapped virtually
- Manages routing of signals between different router levels using external resources
- 1,000 virtual input mappings
- 1,000 virtual output mappings
- Front panel status indicators
- Universal power supply included
- Requires DashBoard Control System
- Optional redundant power
- 5-year transferable warranty

NK-VRC

The NK-VRC Virtual Routing Core adds virtual routing and resource management to any NK Series Routing System. Virtual routing and resource management is an important requirement in larger routing systems, especially those with multiple levels.

Virtual routing provides the ability to assign physical sources and destinations to virtual sources and destinations. Without the NK-VRC, tied switching of sources and destinations will always switch the same physical inputs and outputs across multiple routers. The NK-VRC enables a more flexible setup where the sources and destinations do not have to be identically connected across multiple levels.

Additionally, the NK-VRC enables resource management or path finding in an NK Series Routing System. Resource management enables routing of signals between different router types (such as analog and digital). This is done by using resources to convert between one format to another (such as an analog to digital converter).

Resource management simplifies the operation of a router system by routing signals through a resource from one router to another, without having the user know which source and destination the resource is connected to. Once configured, the system will be able to automatically find the path between routers.

Multiple resources can be managed to enable more than one signal path between routers.

Ordering Information

NK-VRC	Virtual Routing Core Device

NK-VRC External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply
NK-DRY	Y Cable for two NK-P1 External Power Supplies

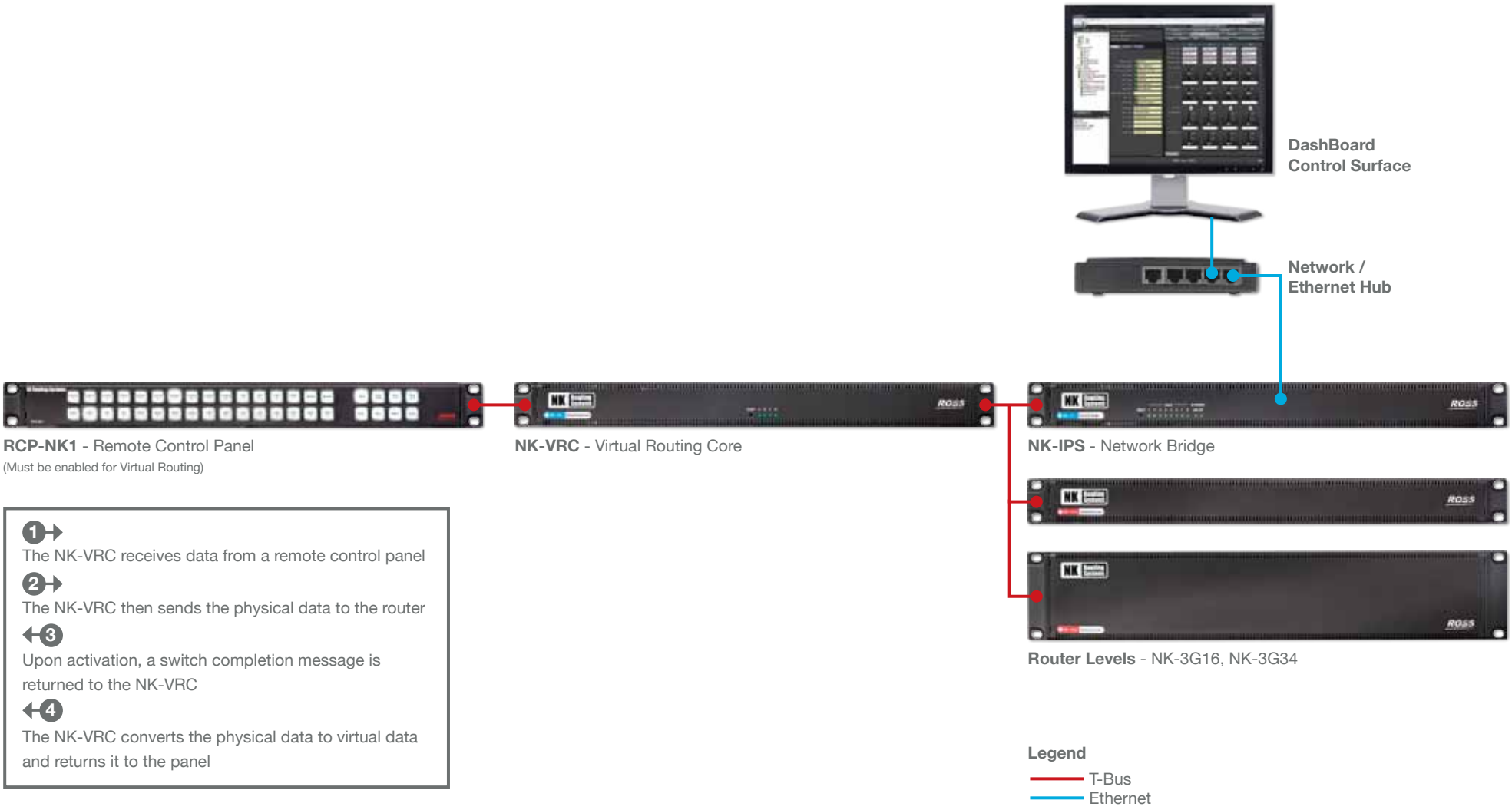
NK-VRC Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply*
NK-D12/P	NK-RP1/P Power Supply Cable for NK-VRC

*For more information on the rack mount power supply system, please see page 216

NK-IPS & NK-VRC

System Diagrams



NK-VRC

Applications

NK-VRC Resource Management - Application #1

RCP-NK1 - Remote Control Panel
(Must be enabled for Virtual Routing)

In this configuration, the 3G / HD / SD SDI router has a mix of HD and SD SDI sources and HD SDI outputs only. Using Resource Management, SD SDI sources will be automatically upconvert using an external up converting resource. HD SDI sources will be routed internally and not use the resource.

Multiple resources can be managed to support multiple simultaneous conversions.

Legend

- T-Bus
- SD SDI
- HD SDI

NK-VRC - Virtual Routing Core

NK-3G72 - 3G / HD / SD SDI Router

openGear® UDC-8625

NK-VRC Resource Management - Application #2

RCP-NK1 - Remote Control Panel
(Must be enabled for Virtual Routing)

In this configuration, the digital audio router can select any of the sources on the analog audio router and vice versa. Conversions between analog and digital is handled using external openGear® resources. The NK-VRC automatically handles the routing to and from the resources between the two router levels.

Multiple resources can be managed to support multiple links between routers.

Legend

- T-Bus
- Analog Audio
- Digital Audio

NK-VRC - Virtual Routing Core

NK-A16-HQ - Analog Audio Router

openGear® - **ADC-8434**

openGear® - **DAC-8418**

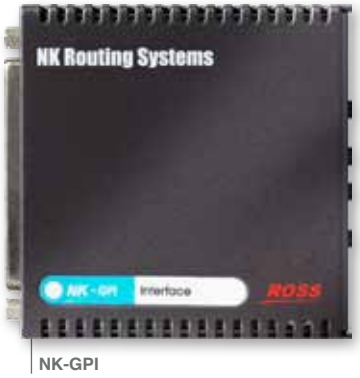
NK-D16-75 - Digital Audio Router

NK-GPI

General Purpose Interface

Key Features

- 16 GPI inputs and outputs
- Return / latch mode
- Easy to install and operate
- Phantom-powered via the T-Bus
- 5-year transferable warranty

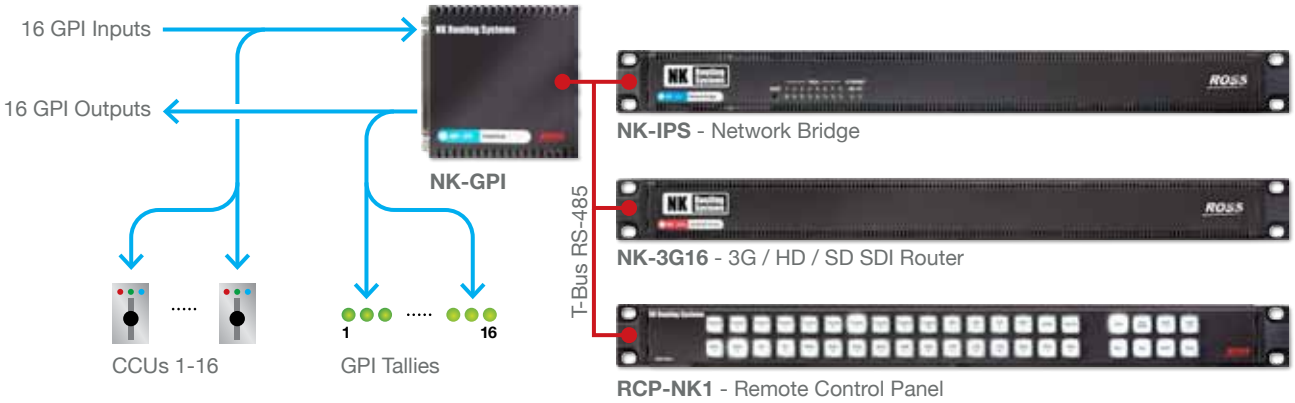


NK-GPI

Overview

The NK-GPI is a stand-alone, universal, general purpose interface for the Ross Video NK Series family of routers. Providing both GPI inputs and outputs, the NK-GPI enables flexible GPI control, configured from a web browser or the DashBoard Control System, via the NK-IPS. The NK-GPI also supports both GPI input return and latch modes.

NK-GPI System Diagram



Ordering Information

NK-GPI	GPI Interface Unit

NK-3RD

Third Party Router Interface

Key Features

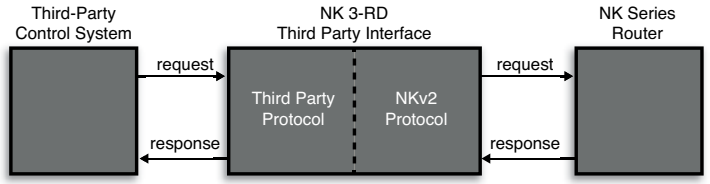
- Enables third-party control via
  - Pro-Bel SW-P-08
  - GrassValley GVG-7000
  - Jupiter ESswitch
- Works with any NK Series router
- Supports crosspoint switch commands
- Supports crosspoint status requests
- Up to 1,024 outputs can be controlled
- Up to 1,024 inputs can be controlled
- Supports up to 16 levels
- Matrix number configurable up to 16
- Virtual routing supported (requires NK-VRC)
- Firmware upgradeable via DashBoard Control System
- Easy configuration
- Front panel status indicators
- Universal power supply included
- Optional redundant power
- 5-year transferable warranty

NK-3RD

Overview

The NK-3RD Third Party Router Interface enables a third-party control system to control an NK Series routing system using the Pro Bel SW-P-08 or the Grass Valley Jupiter ESswtich protocol.

Using this protocol, an NK Series router can emulate a Probel router or interface to Grass Valley products via ESswitch (limited to crosspoint switching and crosspoint status / tally requests), allowing control of the NK Series router via a third-party automation system.



Block Diagram Example of Protocol Emulation

Ordering Information

NK-3RD	Third Party Router Interface

NK-3RD External Redundant Power

NK-P1	Spare or Redundant, 50W, +15V External Power Supply
NK-DRY	Y Cable for two NK-P1 External Power Supplies

NK-3RD Rack Mount Redundant Power

NK-RP1/P	Rack Mount, 1RU, 100W, +15V Redundant Power Supply*
NK-D12/P	NK-RP1/P Power Supply Cable for NK-3RD

*For more information on the rack mount power supply system, please see page 216

NK-SCP/A

ASCII / RS-232 Control Interface

Key Features

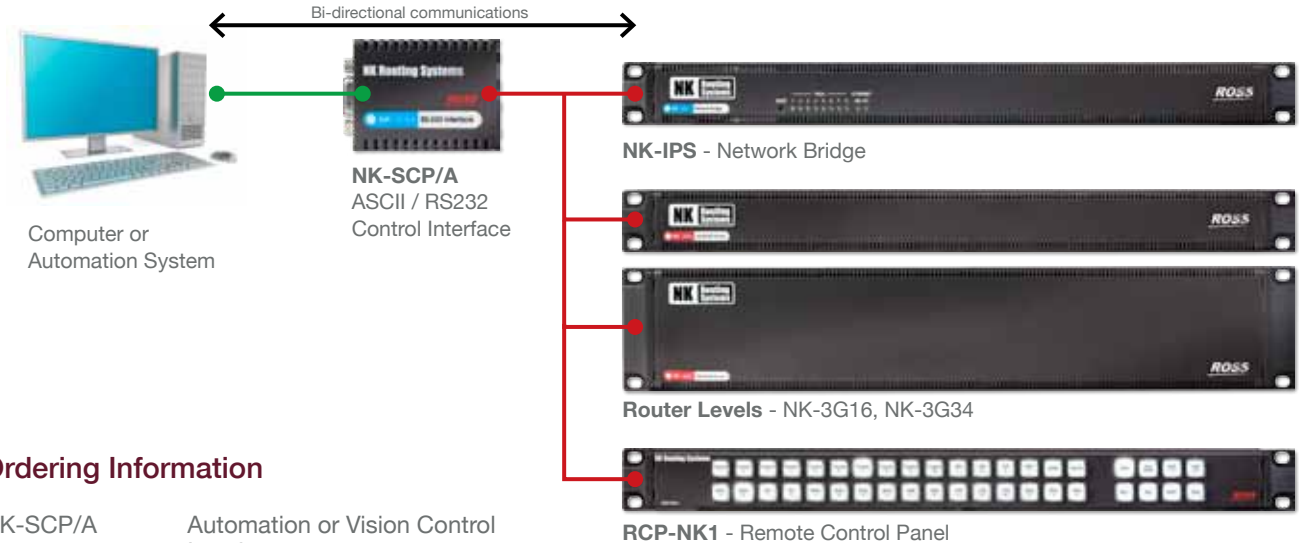
- Allows NK router control via RS-232
- Automation system interface
- Easy to install and operate
- Phantom-powered via the T-Bus
- 5-year transferable warranty

NK-SCP/A

Overview

The NK-SCP/A Control Interface enables an RS-232 device, such as an automation system, computer terminal, video production switcher or other such device to control NK Series routers using the ASCII protocol. Any combination of NK Series routers can be controlled with a maximum size of 255 inputs and 255 outputs with up to 8 levels. The bi-directional protocol includes crosspoint status monitoring and crosspoint switching. Crosspoint switching can be performed using individual levels or through user-defined breakaway mapping.

NK-SCP/A System Diagram



Ordering Information

NK-SCP/A	Automation or Vision Control Interface

NK-SCP/K2

RS-485 Control Interface

Key Features

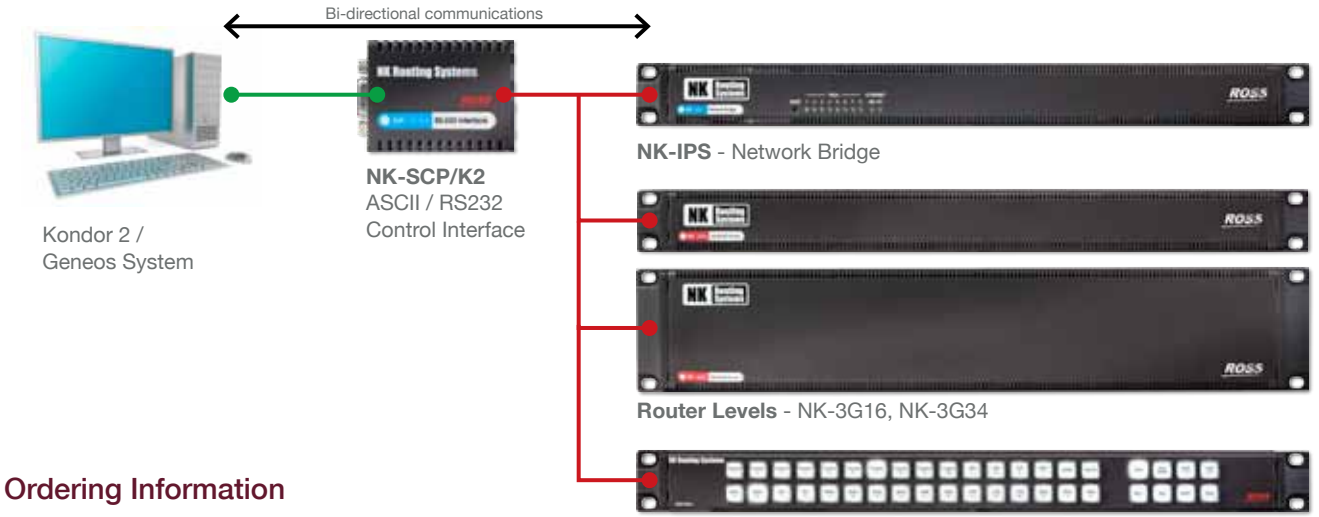
- Allows NK routers to operate as a Kondor 2 / Geneos level
- Easy to install and operate
- Phantom-powered via the T-Bus
- 5-year transferable warranty

NK-SCP/K2

Overview

The NK-SCP/K2 allows Kondor 2 Routing Systems to be extended by using NK Series routers. Any combination of NK Series routers can be added to a Kondor 2 system with a maximum size of 255 inputs and 255 outputs with up to 8 levels. Kondor 2 inputs, outputs and levels are directly mapped to NK Series inputs, outputs and levels, with no user mapping required.

NK-SPC/K2 System Diagram



Ordering Information

NK-SCP/K2	Geneos Control System Interface

NK-RP1

Redundant Power Supply

- Fault tolerant NK power supply option
- Supplies redundant power for up to 4 routers or devices
- GPI alarm output
- Front access for easy module replacement
- 5-year transferable warranty

NK-RP1

Supported Devices

- All NK 16, 32, 34, 64 and 72 routers
- NK-IPS Network Bridge
- NK-VRC Virtual Routing Core

Device Connectors

- DB-9:
  - All NK-164 routers
  - All NK-16 routers
  - All NK-32 routers
  - All NK-34 routers
  - NK-IPS Network Bridge
  - NK-VRC Virtual Routing Core
  - NK-3RD Third Party Router Interface
- Neutrik Speakon®:
  - All NK-64 routers
  - All NK-72 routers

NK-RP1

The NK-RP1 offers a reliable, fault tolerant and fail-safe option for NK Series routers and peripheral devices. The NK-RP1 supplies redundant power for up to 4 routers and devices for a total power consumption of 100 watts. The NK-RP1 provides GPI outputs to indicate alarms, in the event a power supply has failed. The heartbeat LED on the front of the unit also blinks if a PSU has failed.

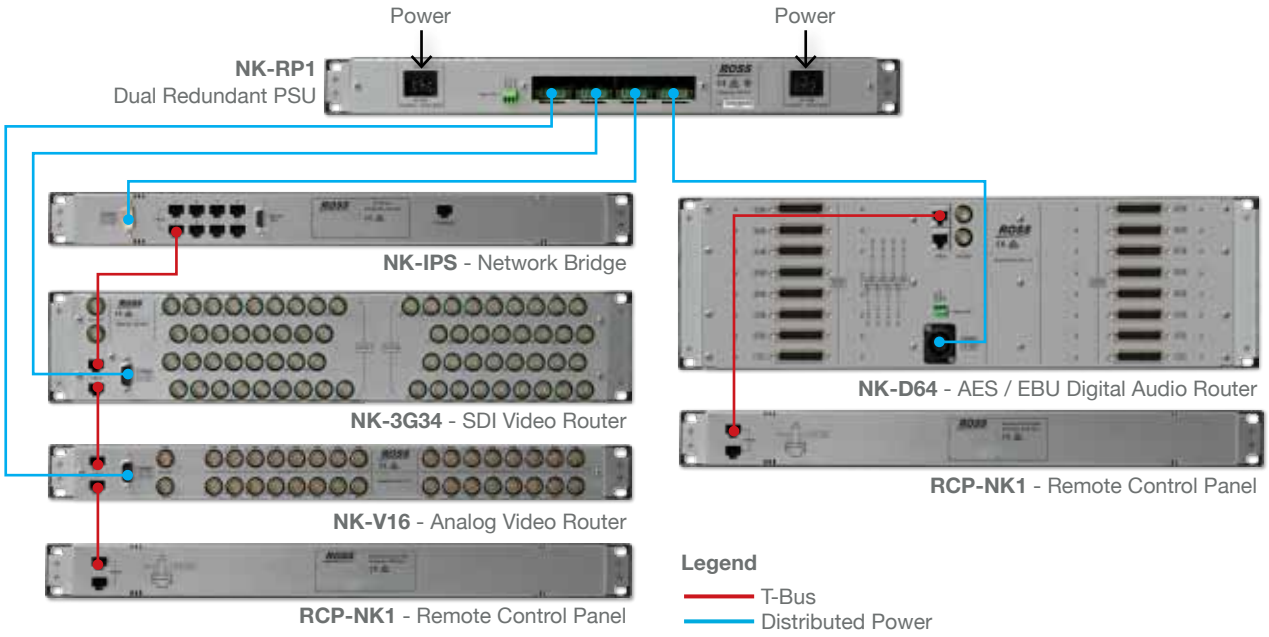
During normal operation, the design of the NK-RP1 enables balancing of the power load, delivering high reliability to all connected routers and devices. When configured as a dual redundant positive and negative power supply, the NK-RP1 has greater than 80% efficiency as a negative power source, providing both efficient and low-temperature operation.

The NK-RP1 comes standard as a positive power rail supply. A negative power rail option may be installed as an upgrade by simply removing the front panel and inserting the NK-RP1-NEG option card (required for NK-A16/32 and NK-V16/32 router levels).

Ordering Information

NK-RP1/P	NK Series Dual Redundant Power Supply, +15 Volt (100W)
NK-RP1/PN	NK Series Dual Redundant Power Supply, +/-15 Volt (100W)
NK-RP1-NEG	-15 Volt regulator module for NK-RP1/P (50W max)
NK-D12/PN	PSU cable for NK-RP1/PN, 1.2m, 9-pin D connector, +/-15 Volt
NK-D12/P	PSU cable for NK-RP1/PN, 1.2m, Neutrik Speakon® connector, +15 Volt

NK-RP1 System Diagram



Technical Specifications

PERFORMANCE	
Input	100 to 240 V @ 1.5 A (47 to 63 Hz)
Positive Output	+15 V @ 6.67 A (100W)
Negative Output	-15 V @ 3.33A (optional)
Maximum Total Output	100W
Relative +/- Output	see table below
GENERAL	
On-Board Cooling	2 x 4.0cm fans
Dimensions	1RU x 19.0cm deep

Specifications subject to change without prior notice.

Relative + / - Power Output

	POWER DISTRIBUTION (watts)						
POSITIVE POWER	100	90	80	70	60	50	40
NEGATIVE POWER	0	8.4	16.8	25.2	33.6	42	50